UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7
11201 Renner Boulevard
Lenexa, Kansas 66219

JUN 0 6 2016

Ryan S. Thomas, P.E.
City Administrator
City of Wildwood
16860 Main Street
Wildwood, MO 63040

Dear Mr. Thomas:

By email dated May 11, 2016, to the U.S. Environmental Protection Agency, the City of Wildwood requested responses to seven recommendations that were described in the following document:

"*Report to the City of Wildwood on Ellisville Site EPA documents, Prepared by ESC, LLC, May 6, 2016*."

There are seven recommendations listed in the ESC, LLC report. The following are EPA responses to those recommendations.

1. *Recommendation: Considering that the existing sample results indicate elevated concentrations of dioxin and other toxic chemicals, an interim safety institutional control measure is needed. EPA needs to install fencing and signs around the contaminated area making it clear that the contaminated area is a threat to human health.*

   With respect to "other toxic chemicals," some of the sample results that were referenced in the main body of the report (from SFRA 34-36) did show VOCs, PAHs and phthalates above 1,000 ppb. However:

   (a) **None of the results in these samples exceeded soil screening levels for the respective compounds**. Screening levels are typically the most conservative concentration values that actual soil concentrations are compared to. And none of the screening values were exceeded.

   (b) Regardless, the material that was found in these samples, which was stained and odorous, was removed and disposed offsite.

   For example, total xylenes were detected at a concentration of 9,400 to 16,000 ppb. The soil screening level for total xylenes is 580,000 ppb. Toluene was detected at 6,700 ppb, and the soil screening level for toluene is 4,900,000 ppb. Pyrene was detected at 2,200 ppb; its soil screening level is 1,800,000 ppb. Phenol was detected at 23,000 ppb; its soil screening level is 19,000,000 ppb.

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None of the compounds in these samples exceeded respective screening levels, so no "interim safety institutional control measure is needed" for these compounds.

This appears to be a "units" mistake, i.e, ESC, LLC may not have made the unit conversions correctly. Typically, these types of soil concentrations are given in parts per million, not billion. So when something is reported as 16,000 ppb or 23,000 ppb, it can look like a big number. ESC, LLC may have been comparing parts per billion concentrations to parts per million screening levels. This is not an uncommon error.

With respect to dioxin: when the EPA considers cleanup goals in soil, our policy is to look at a "reasonable maximum exposure" for the area in question. For the area north of the proposed Strecker Forest development, we looked at an "upper end" number of days that a youth could frequent the area. After discussion with agency partners, we determined this upper end number of days equated to 96 days per year (or 384 hours per year), which is based on "reasonable maximum exposure" assumptions. In reality, this would appear to greatly overestimate the amount of time that a youth would spend in what amounts to a very small subset of the area north of the proposed Strecker Forest development. Another way to say this is that youths would be expected to be physically present 96 days per year, every year, for 10 years straight in a few isolated areas near the barn/arena/creek—and *just those areas.* In addition, children are less likely to ingest dirt or get it on their skin when the area is covered by grass or vegetation; the area in question is, for the most part, heavily vegetated. Finally, the vast majority of remaining surface soil in the area north of the proposed development does fall below the residential screening number of 50 parts per trillion, with a few isolated areas showing an average concentration of approximately 200 parts per trillion. It is more likely that a potential youth visiting this area would travel all across the area—including areas near background concentration for dioxin—so their actual exposures would be much less than that predicted by our risk-based cleanup number. **All of these factors demonstrate that our common number one priority goal—protection of human health—has been met at a very high level of protectiveness.**

As a result, there is no reason to "install fencing and signs around the contaminated area making it clear that the contaminated area is a threat to human health."

In addition, the author references "regional soil clean-up standards" for dioxin, which do not exist. Soil *screening* levels for dioxin exist, but the difference between a screening level and a cleanup standard is very significant.

Screening levels are not de facto cleanup standards and should not be applied as such. The screening level's role in site "screening" is to help identify areas, contaminants, and conditions that require further federal attention at a particular site. Generally, at sites where contaminant concentrations fall below screening levels, no further action or study is warranted under the Superfund program, so long as the exposure assumptions at a site match those taken into account by the screening level calculations.

Note: A recent example of a calculation of site-specific cleanup goals (at a site in EPA Region 5, where site-specific clean-up goals were also developed), can be found at http://www.epa.gov/superfund/tittabawassee-river. At this site, site-specific cleanup numbers were developed for maintained ***residential areas*** (250 parts per trillion) and for areas that included a number of different ***non-residential settings*** (2,000 parts per trillion).

2. *Recommendation: Continue sampling soil and groundwater and removing contaminated materials until the site is clean.*

Surface soils at the site have been cleaned up utilizing site-specific risk-based cleanup goals. The EPA has made this point in numerous public documents and discussions with the local community over the past few years. The agency has also continually made the point that trace amounts of dioxin are present at the site, primarily at depths greater than one foot, in areas excavated back in the 1990s. Even in these areas, however, the EPA has not seen any dioxin concentrations which exceed the site-specific risk-based cleanup goals for surface soils.

Further, the estimated volume required to be excavated to meet a 50 part per trillion standard north of the planned development area is 11,000 tons. Transportation of 11,000 tons of material, for 20-ton capacity dump trucks, would require about 550 dump trucks—550 trucks into the community and site, 550 trucks out, to a (projected) location in Oklahoma. The cost of such excavation and disposal is estimated at $4-5 million. The amount of dioxin contained in 11,000 tons of material, at an average concentration of 200 parts per trillion, is about 0.07 ounces, (about half a teaspoon). Launching an ambitious, scientifically unnecessary $4-5 million cleanup would spend over half of the Region's entire "removal action" annual budget. Region 7 has always aimed to manage this budget to protect as many Missourians as possible by funding high risk cleanups, such as childhood exposures to lead from historic mining sites. These lead sites, as you know, present an immediate risk of irreversible neurological harm to children. Quite simply, dollars taken to fund additional actions at this site (for negligible additional human health risk reduction) would take funding away from much higher-priority removal actions, which make real and demonstrable human health risk reductions. Regardless of the cost, however, **surface soils at the site have been cleaned up utilizing site-specific risk-based cleanup goals, goals which represent a high level of protectiveness.**

With regard to groundwater, the Missouri Department of Natural Resources continues an investigation of groundwater, and plans to issue a report on their findings.

As an aside, regarding the proposed residential development, the **EPA has maintained since at least 2012 that this area could be developed without restrictions**.

3. *Recommendation: Reinstate the five year review process.*

EPA will continue our discussions with the city and state on this topic on the Bliss subsite. It will be discussed with other related options to collaboratively ensure an adequate degree of long-term stewardship.

4. *Recommendation: Implement additional sampling to delineate the extent of contamination.*

Surface soils at the site have been cleaned up, described previously and in other documents. The EPA is, however, engaged with the city of Ellisville on investigating historical sampling, which may include some additional limited sampling in areas that the city identified.

5. *Recommendation: Correct the errors in the files sent to the City.*

   Some questions were raised by ESC, LLC regarding some details of a few of the sampling results. The clarifications are as follows:

   Sample SFRA-163 was a nine-aliquot composite collected from a stockpile of backfill soil on July 30, 2014. The soil had been delivered to the site by EPA's contractor on July 29-30, 2014. The backfill soil was obtained from a backfill provider in Wentzville, Missouri. The nature of this sample (backfill material) did not correspond with the purpose of samples included in Tables 1-5 of the report. The dioxin toxic equivalence (TEQ) result for sample SFRA-163 was 5.09 parts per trillion (ppt).

   The complete laboratory report for samples SFRA-149 through -159 and SFRA-129 through -133 has been made available. A more complete laboratory report, including all supporting documentation, for samples SFRA-129 through -133 is now available.

   None of these additions changes any of the results presented in the body of the report.

6. *Recommendation: Match the existing soil data with the groundwater data and initiate any needed remedial actions to correct the contamination of soil and groundwater.*
   With regard to groundwater, the Missouri Department of Natural Resources continues an investigation of groundwater, and plans to issue a report on their findings. At this time, there has been no need identified that would justify any remedial actions of the groundwater.

7. *Recommendation: Because two of the three Ellisville site properties have recent documentation of contamination, no part of the Ellisville Site should be delisted. The current work on the Bliss/Strecker Forest properties of the Ellisville Site, and the Callahan Property indicate contamination remaining in surface and/or subsurface soils. The contamination at the Bliss/Strecker Forest property had contamination known to be a significant threat to health and the environment. Further investigation of the Callahan property was not conducted after chemicals were identified during a groundwater well installation. Therefore, EPA has not affirmatively demonstrated that the Ellisville Site as a whole is free from significant threats to human health.*

   The partial deletion process was initiated at the request of the current property owner of the Callahan subsite, and is supported by the state of Missouri.

   The Bliss subsite is not relevant to the delisting of the Callahan subsite. In addition, the two subsites are separate, are non-contiguous, and do not share the same site histories. Finally, contamination issues at the Bliss subsite have been addressed as described previously.

   An evaluation of the Callahan property is described in "Evaluation of Post-Removal and Historical Data Representative of Current Conditions, Callahan Property Subsite, Ellisville Superfund Site, Operable Unit 3, Wildwood, Missouri, CERCLIS ID: MOD980633010," dated June 22, 2015. Among other things, the evaluation concluded that the Callahan property "***no longer pose[s] unacceptable human health risks for any type of current or future exposure***

scenario. The Callahan Property is now safe for unlimited use and unrestricted exposure." Based on the evaluation, as well as the requirements under 40 CFR 300.425(e) being met, the EPA concluded that the subsite could and should be deleted from the NPL.

The EPA removed a relatively minor amount of contamination that remained at the property during the 2012 removal action. That included the contamination that was identified during the well installation. All details of the Callahan removal can be found in the Site Reassessment Report dated June 13, 2012. The agency also conducted a groundwater investigation at the property where three wells were installed then sampled. All groundwater samples at the Callahan subsite were non-detect for contaminants of concern. Therefore, the EPA has affirmatively demonstrated that the Callahan subsite is free from significant threats to human health.

As always, feel free to call me at (800) 223-0425 if you have any questions or need clarification.

Sincerely,

David P. Williams
Chief
Planning and Preparedness Section
Superfund Division